

REMARKS

The present invention relates to a process and an apparatus for manufacturing an electret article.

In the final Office Action dated May 9, 2011, claims 1 and 3 - 10 were rejected in a final Office Action.

The sole rejection of claims 1 and 3 - 10 was under 35 U.S.C. § 103(a) based on Angadjivand (USP 6,375,886) in view of Morozov (US 2002/0048770).

The Examiner's explanation of the rejection as set forth at pages 2 - 7 is very similar to the statement of the rejection in the previous Office Action of November 10, 2010, but the Examiner emphasized certain terminology and statements of the Angadjivand reference with underlining at pages 3 - 4. The Examiner also made some additional comments at pages 5 - 6 regarding the reliance on Morozov and the asserted obvious modification of Angadjivand in view of Morozov to derive the present claimed invention. At pages 6 - 8, the Examiner discussed claims 3 - 10; regarding the droplet resin percentage in claim 3, the Examiner recognized that Angadjivand does not expressly disclose the droplet versus fiber content, but the Examiner emphasized Angadjivand as disclosing that the polar liquid was sprayed in an "effective amount." The Examiner furthermore asserted that discovering an optimum value of a result effective variable involves only routine skill in the art. At pages 8 - 11, the Examiner included additional remarks in the Response to Arguments section.

In this Amendment, Applicant has placed claim 3 into independent form, and has amended claim 10 further in conformity with claim 1. No new issues are raised.

Applicant respectfully submits that claims 1 and 3 - 10 hereinabove are non-obvious and patentable over the cited art of record, i.e., the Angadjivand and Morozov references, and therefore the rejection under 35 U.S.C. § 103(a) should be withdrawn and the claims allowed forthwith.

In accordance with the process and apparatus of the present invention, the melt-extruded thermoplastic resin fibers are passed through a mist space substantially formed from droplets of a polar liquid wherein the average diameter of the droplets is less than 20 μm . The fibers are subsequently collected. As is clearly required by independent claim 1 and independent claim 10, the fibers are not wetted upon passing through the mist space, and are not subject to a drying step after passing through the mist space.

It appears that the Examiner was under the impression that he had found all of the bits and pieces of the present invention in the prior art. Then, applying improper hindsight, the Examiner asserted that one of ordinary skill in the art would be motivated to combine Angadjivand and Morozov together in a manner so as to render the presently claimed invention obvious.

However, upon closer scrutiny, it is clear that the presently claimed invention cannot be derived from the art cited by the Examiner, particularly when the actual and whole teachings of Angadjivand are considered, as explained below in further detail.

In the final Office Action, the Examiner basically repeated the rejection from the earlier Office Action, but the Examiner emphasized certain aspects of the Angadjivand reference in relationship to the presently claimed invention. Most particularly, the Examiner emphasized a part of the paragraph appearing at column 8, lines 12 - 32 of the Angadjivand reference. The

Examiner particularly emphasized that Angadjivand teaches that it is possible for no water to be present on the collector of Angadjivand (see collector **26** in Figure 1 of Angadjivand).

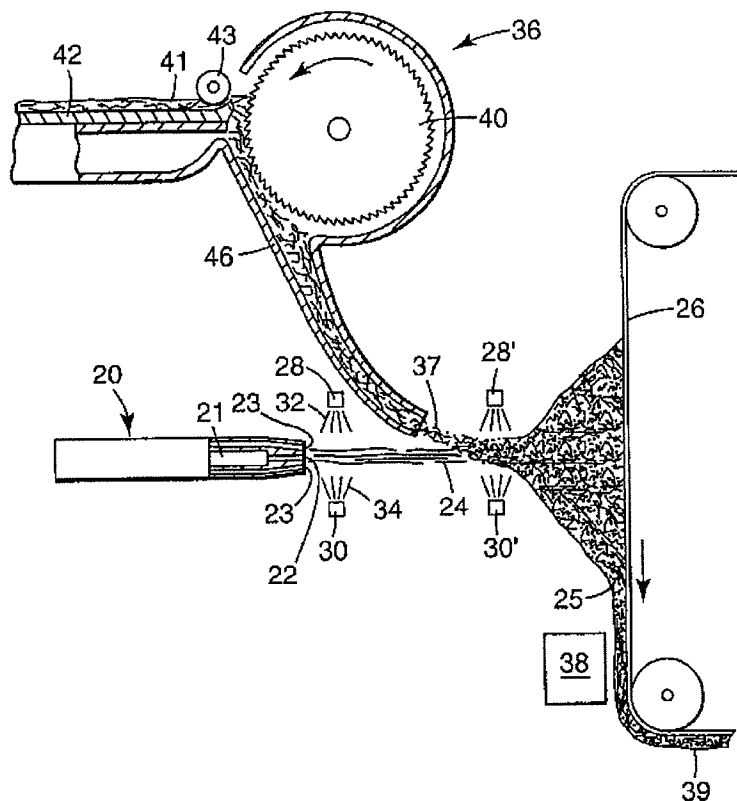


Fig. 1

When this teaching of Angadjivand is carefully considered, however, it seen that Angadjivand is merely indicating that, in one embodiment, the collector 26 is not wetted. I.e., Angadjivand simply teaches that it may be possible “for no water to be present on the collector, if, for example the distance between the origin of the free fiber and the collector is so great that

the polar liquid dries while on the free fiber rather than while on the collected web.” (col. 8, lines 18 - 22 of Angadjivand, emphasis added)

In sharp contrast to the foregoing, Applicant’s claims require that “the fibers are not wetted upon passing through said mist space” (see claim 1). This clearly and unequivocally distinguishes over the teachings of Angadjivand. There is no teaching in Angadjivand nor any modification suggested based on Morozov that would lead to a mist space in Angadjivand where the fibers are not wetted.

Still further with respect the Examiner’s selective citation of only a part of the paragraph appearing at column 8, lines 12 -32, consideration of the whole paragraph makes it even more clear that a person skilled in the art following the teachings of Angadjivand would not be lead in a direction so as to derive the presently claimed invention.

In the first place, in the sentence immediately following the last portion of the disclosure quoted by the Examiner in the Office Action, Angadjivand states that:

“In a preferred embodiment of the invention, however, the distance between origin and collector are not so great, and the polar liquid is employed in such amounts that the collected web is wet with the polar liquid.” (column 8, lines 22 - 26).”

The Angadjivand reference further goes on to describe a more preferred embodiment:

“More preferably, the web is so wet that the web will drip when slight pressure is applied.” (Angadjivand column 8, line 26 - 27).

Still further, the part of the noted Angadjivand paragraph not cited by the Examiner goes on to teach that:

“Still more preferably, the web is substantially or completely saturated with the polar liquid at the point where the web is formed on the collector. The web may be so saturated that the polar liquid regularly drips from the web without any pressure being applied.”
(column 8, lines 29 - 32 of Angadjivand).

Considering the whole teachings of the Angadjivand reference, and what Angadjivand teaches as preferred and more preferred, it is clear that one following the teachings of Angadjivand would, in all cases, wet the fibers with the polar liquid.

There is simply no teaching in the secondary Morozov reference that would lead a person of ordinary skill in the art of electret technology to consider modifying the teachings of Angadjivand to arrive at the presently claimed invention. Again it noted that Morozov is directed to different technology, viz. the electrospraying of solutions of substances for mass fabrication of chips and libraries. To an extent, the Examiner has even admitted that Morozov is not pertinent, in the Examiner’s admission at page 5 of the Office Action that the Examiner is only relying on Morozov for teaching that droplet sizes ranging from 0.3 to 20 microns can be conventionally obtained, and for a capability of obtaining a level where evaporation of the droplets stream becomes possible. The disclosure of Morozov has no relationship to the teachings of the Angadjivand reference based on which a person of ordinary skill in the art would be lead away from Angadjivand’s wetted fibers so as to derive the present claimed invention.

In Angadjivand, in every case, the polar liquid is clearly present in that form (i.e., as a liquid) on the free fibers. The possibility mentioned in Angadjivand (in a non-preferred embodiment) that the polar liquid may dry before reaching the collector clearly acknowledges that “...the polar liquid dries while on the free-fiber rather than while on the collected web.” (col. 8, lines 21 - 22 of Angadjivand).

Thus, a person of ordinary skill in the art would clearly not be led by Angadjivand, even with background knowledge of Morozov, to derive the presently claimed invention, e.g., wherein claim 1 requires that “the fibers are not wetted upon passing through said mist space and are not subjected to a drying step after passing through said mist space”.

Withdrawal of the rejection under 35 U.S.C. § 103(a) with respect to all claims is the only proper course of action in view of the foregoing, and is respectfully requested. However, for the sake of complete discussion, Applicant also further addresses the Examiner’s assertions regarding what constitutes an “effective amount” *vis-à-vis* the important preferred embodiment of the present invention as set forth in claim 3.

First, Angadjivand’s very generalized disclosure of spraying the polar liquid on the fibers does not specify what quantity is sufficient to constitute an “effective amount”.

Applicant again notes that the references in Angadjivand to an “effective amount” is not a teaching that would result in selection by a person of ordinary skill in the art of a value within the scope of the present claims. In other words, Angadjivand’s teaching of an “effective amount” on which the Examiner relies is merely a invitation to conduct experiments, and provides no basis for a person of ordinary skill in the electret art to select the value of “500 or more” as is specified in now independent claim 3.

In view of the foregoing, independent claims 1 and 3, dependent claims 4 - 9, and independent claim 10, which has been amended consistent with claim 1, are not obvious and are patentable over the cited art of record.

In view of the above, reconsideration and allowance of claims 1 and 3 - 10 of this application are now believed to be in order, and such actions are hereby earnestly solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local Washington, D.C. telephone number listed below.

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CUSTOMER NUMBER

Date: **October 11, 2011**

Respectfully submitted,



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